

Ninepipe National Wildlife Refuge

Lee Metcalf ISST

Accomplishments

Weed Species	Total Survey Acres ¹	Survey Acres Infested ²	Acres Treated ³
Spotted knapweed	0	0.58	0.58
Yellowflag iris	638.79	1.95	1.95
Project Site Total	638.79	2.54	2.54

¹ Area covered during the course of weed management activities regardless of presence or absence of target weed species as measured by perimeter in GIS.

² Area occupied by weed species within the survey area that does not contain the space between individuals or populations (i.e. net infestation size) as measured by GPS feature for monitoring and treatment combined, but areas in common not additive.

³ The area or subset of infested area that has received some form of treatment as measured by GPS feature.

Highlights

Schedule

Dates	Project Type	Target Species	Size of Crew	Project Notes
23-Sept-2014 to 25-Sept-2014	Refuge Project Chemical Treatment	Yellowflag iris	5	Systematic transecting and treatment of all yellowflag iris found.

Coordination and Cooperation

- ISST Crew Leader Jessica Zarate coordinated with Biologist Amy Lisk and ISST supervisor Lindy Garner to add this project as time allowed during the work week.
- Amy Lisk contacted Wildlife Area Manager, John Grant of *Montana Fish Wildlife & Parks* to coordinate the use of his workshop facility which is located on the west border of this refuge. Jessica Zarate also met with John Grant upon arrival. This coordination saved the team a significant amount of time and resources by having a clean water source and secure location for parking equipment each evening with easy accessibility to the site.
- As quads were unloaded, the team found damage to a boot on a front wheel rendering the bike unusable. Jessica Zarate coordinated with Amy Lisk to borrow a quad equipped with a bloomless sprayer for subsequent days of work.
- The “Strike Team Expectation and Accomplishment Checklist” was used to outline project details of work completed (Appendix A).

Prevention and Education

- Preventing the spread and reducing infestations of noxious invaders on the refuge is a top priority.

Early Detection and Rapid Response

- Early detection and rapid response was not the focus of this management project.

Inventory and Monitoring

- This species was not in flower at the time of the survey but plants were readily identifiable. Conditions onsite were very dry, making the dark green leaves of the iris plants stand out.
- There are many plausible theories for this decline in infested acres, which may include but is not limited to a combination of factors such as ongoing refuge management, changes the water regime (longer periods of dry down), mapping differences, climate change, etc.

- Other weeds reported as occurring onsite include, Canada thistle, common mullein, common teasel, Dalmatian toadflax, houndstongue, musk thistle, North Africa grass, Russian olive and whitetop.



Ninepipe National Wildlife Refuge. Photo by Jessica Zarate.

Management

- This site was covered by dividing the crew into two groups with two separate filling stations, one located on the north side of the reservoir and the other on the south side.
- All yellowflag iris found was treated using a 2% solution of *Aqua Neat*, an aquatic approved glyphosate herbicide mixed with a non-ionic surfactant.
- Spotted knapweed was also treated in the parking area on the north side of the site.
 - Upon arrive the team had a small amount of *Milestone* herbicide mixed already in one of the applicators spray tanks. This herbicide could have been transferred and stored but it took a minimal amount of time to utilize the spray treating the spotted knapweed found to be present in the parking area.

Herbicide Applied

- 123.98 oz of *Aqua Neat* was used for treatment of yellowflag iris
- 1.68oz of *Milestone* was used for spotted knapweed

Proposed 2014 Schedule

- Future treatments of yellowflag iris are recommended to remain a priority. A foliar application with aquatic approved glyphosate in pre-bloom to early flower is optimal to curb seeding; but many aquatic glyphosates can be applied anytime during the growing season.

Appendix A

Strike Team Expectation and Accomplishment Checklist

Arrival Interview

Station: National Bison Range Complex

Date of Visit: 09/22/14-09/25/14

Objectives and Priority Areas defined:

Species	Unit	Section of Unit	Inventory/Monitor	Treat	Chemical (ref or isst)
Yellow toadflax	NBR Refuge	Alexander Basin and on North Boundary Road	Point-to-point historic locations plus a 30M buffer around these areas and new plants found	Yes	Tordon and Distinct – Refuge/ISST
Leafy spurge		Alexander Basin	Systematic transecting & Historic points	Yes, clip and bag flowers	Plateau and MSO – Refuge
Leafy spurge	Anderson WPA	Historic points	No	Yes, clip and bag flowers	Plateau and MSO – Refuge

Notes:

ATV Use: (define whether allowed, if partial allowance any restricted areas or travel directions, including only along fence line or not, only along two-track or if can systematically traverse project site, or if point-to-point treatment)

All use of ATVs will be discussed with refuge staff before going in the field to determine restrictions. ATVs will be used for treatments as needed but many of the areas will likely be accessed on foot with a backpack sprayer.

Other access issues, conflicts, etc...:

Bison, rattlesnakes, and other wildlife may be present in areas worked and safety will be discussed prior to starting surveys.

Station or Site Manager (or

Acting): _____ Date: _____

(back has Exit Interview)

Exit Interview

Species	Unit	Section of Unit	Inventory/Monitoring	Treat	Completed (yes or no with explanation)
Yellow toadflax	NBR Refuge	Alexander Basin and on North Boundary Road	Point-to-point historic locations plus a 30M buffer around these areas and new plants found	Yes	Yes, none found on boundary road and only two plants found in Alexander Basin were pulled. Extremely dry conditions.
Leafy spurge		Alexander Basin	Systematic transecting & Historic points	Yes, clip and bag flowers	Yes, historic locations were treated. Most plants very dry except where found within the snowberry.
Leafy spurge	Anderson WPA	Historic points	No	Yes, clip and bag flowers	Yes, location off site was still green but plants onsite were very dry.
Yellowflag iris	Ninepipe NWR	Entire site	No	Yes	No, see notes below.

Notes:

Ninepipe NWR: There were two people working north of the lake and three people to the south. We began work on the west side and worked moving East. We covered most of the north and two-thirds of the south side.

Concerns with Project:

None.

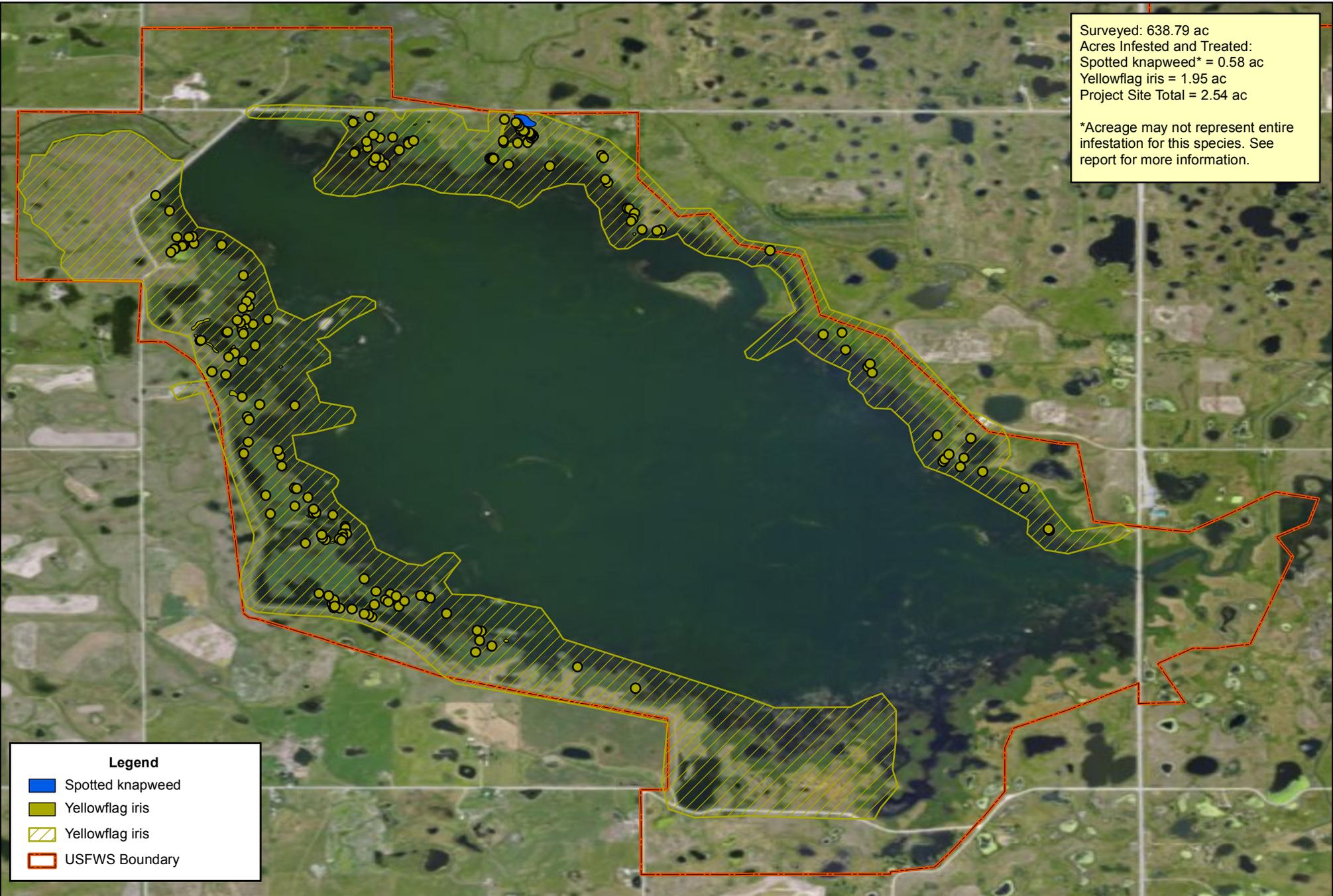
Station or Site Manager (or

Acting): _____ Date: _____



Surveyed: 638.79 ac
 Acres Infested and Treated:
 Spotted knapweed* = 0.58 ac
 Yellowflag iris = 1.95 ac
 Project Site Total = 2.54 ac

*Acreage may not represent entire infestation for this species. See report for more information.



Legend

- Spotted knapweed
- Yellowflag iris
- Yellowflag iris
- USFWS Boundary



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HELENA, MT 59620-0201
Phone 406-444-3730

DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Ninepipe NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	C. Holtz	
Date	9/23/2014	
County	Lake	
Time Start/Stop	3:00pm-5:00pm	
Temperature	78°F	
Relative Humidity	45%	
Wind Speed/Direction (from)	3 mph NW	
Pesticide Manufacturer	NuFarms Inc.	
Trade Name	Aquaneat	
EPA Reg # or Formulation	228-365	
Rate: Product/Diluent Per Acre	2% solution	
Amount of Chemical Applied	10.2oz (4 gal mix)	
Equipment Used (atv,backpack,truck,saw)	ATV handgun (14 GPA)	
Bio-Control (genus species)	-	
# released / acre	-	
Mechanical (mow,hand-pull)	-	
Plant Phenology & Stage	Post-flower	
Dominant Pest(s)	Yellowflag iris	
Equipment Used	-	
Acres/Area Treated or # of plants	0.29 acres	
GPS Filename	-	

Location #1 (Site specific description) North end around pond near access parking area Location #2 (Site specific description)	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... R-900 used at 3.2oz/10gal Hi-Light used at 3oz/10gal
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CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	J. Miskella	J. Miskella
Date	9/23/2014	9/23/2014
County	Lake	Lake
Time Start/Stop	3:00pm-3:45pm	3:45pm-4:30pm
Temperature	78°F	78°F
Relative Humidity	28%	28%
Wind Speed/Direction (from)	6mph N	6mph N
Pesticide Manufacturer	Dow Agrosciences	NuFarms Inc
Trade Name	Milestone	AquaNeat
EPA Reg # or Formulation	62719-519	228-365
Rate: Product/Diluent Per Acre	6oz/ac	2% solution
Amount of Chemical Applied	1.68oz (5 gal mix)	1.28oz (0.5 gal mix)
Equipment Used (atv,backpack,truck,saw)	ATV handgun (18 GPA)	ATV handgun (18 GPA)
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	-
Plant Phenology & Stage	Post-flower	Rosette, Post-flower
Dominant Pest(s)	Spotted knapweed	Yellowflag iris
Equipment Used	-	-
Acres/Area Treated or # of plants	0.28 acres	0.03 acres
GPS Filename	-	-

Location #1 (Site specific description) Parking area	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... For Application #1: Spreader 90 used at 3.2oz/10gal Hi-Light used at 3oz/10gal For Application #2: R-900 used at 3.2oz/10gal Brandt Bigfoot dye used at 3oz/10gal
Location #2 (Site specific description) Around the pond closest to the parking area	

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CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	J. Zarate	C. Holtz
Date	9/24/2014	9/24/2014
County	Lake	Lake
Time Start/Stop	8:00pm-12:00pm/12:00pm-4:00pm	9:00am-4:00pm
Temperature	65°F - 85°F	72°F
Relative Humidity	75% - 60%	52%
Wind Speed/Direction (from)	2 mph S	3 mph N
Pesticide Manufacturer	NuFarms Inc.	NuFarms Inc
Trade Name	AquaNeat	Aquaneat
EPA Reg # or Formulation	228-365	228-365
Rate: Product/Diluent Per Acre	2% solution	2% solution
Amount of Chemical Applied	2.5oz (1 gal mix)	10oz (4 gal mix)
Equipment Used (atv,backpack,truck,saw)	ATV handgun (80 GPA)	ATV handgun (14 GPA)
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	-
Plant Phenology & Stage	Leaf on	Post-flower
Dominant Pest(s)	Yellowflag iris	Yellowflag iris
Equipment Used	-	-
Acres/Area Treated or # of plants	0.01 acres	0.29 acres
GPS Filename	-	-

Location #1 (Site specific description) Southwest corner of refuge Location #2 (Site specific description) East boundary heading south	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... For both Applications: R-900 used at 3.2oz/10gal Brandt Bigfoot dye used at 3oz/ 10gal Location #1: Used Refuge ATV and sprayer because ISST quad had a boot torn boot during work earlier this week. Calibrated sprayer handgun prior to use.
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CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	B. Mullen	J. Wilson
Date	9/24/2014	9/24/2014
County	Lake	Lake
Time Start/Stop	9:00am-3:30pm	10:00am-4:00pm
Temperature	63°F - 89°F	89°F
Relative Humidity	73% - 39%	39%
Wind Speed/Direction (from)	2 mph NW / 7 mph SW	7 mph N
Pesticide Manufacturer	NuFarms Inc.	NuFarms Inc
Trade Name	AquaNeat	AquaNeat
EPA Reg # or Formulation	228-365	228-365
Rate: Product/Diluent Per Acre	2% solution	2% solution
Amount of Chemical Applied	15.36oz (6 gal mix)	38.4oz (15 gal mix)
Equipment Used (atv,backpack,truck,saw)	ATV handgun (31 GPA)	ATV handgun (36 GPA)
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	-
Plant Phenology & Stage	Post-flowering	Rosette
Dominant Pest(s)	Yellowflag iris	Yellowflag iris
Equipment Used	-	-
Acres/Area Treated or # of plants	0.19 acres	0.42 acres
GPS Filename	-	-

Location #1 (Site specific description) West side Location #2 (Site specific description) West side of Ninepipes, north of FWP shop	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... Application 1#: Spreader 90 used at 3.2oz/10 gal Brand'st Bigfoot used at 3oz/10 gal Application #2: R-900 used at 3.2oz/ 10gal Brandt's Bigfoot used at 3oz/ 10 gal
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	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	J. Miskella	
Date	9/24/2014	
County	Lake	
Time Start/Stop	8:00am-4:00pm	
Temperature	85°F	
Relative Humidity	52%	
Wind Speed/Direction (from)	3 mph N	
Pesticide Manufacturer	NuFarms Inc.	
Trade Name	AquaNeat	
EPA Reg # or Formulation	228-365	
Rate: Product/Diluent Per Acre	2% solution	
Amount of Chemical Applied	1.92oz (0.75 gal mix)	
Equipment Used (atv,backpack,truck,saw)	ATV handgun (18 GPA)	
Bio-Control (genus species)	-	
# released / acre	-	
Mechanical (mow,hand-pull)	-	
Plant Phenology & Stage	Rosette, Post-flowering	
Dominant Pest(s)	Yellowflag iris	
Equipment Used	-	
Acres/Area Treated or # of plants	0.04 acres	
GPS Filename	-	

Location #1 (Site specific description) North area of Ninepipe Location #2 (Site specific description)	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... R-900 used at 3.2oz/10 gal Brandt's Bigfoot dye used at 3oz/10 gal
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CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	J. Miskella	B. Mullen
Date	9/25/2014	9/25/2014
County	Lake	Lake
Time Start/Stop	8:00am-11:30pm	8:00am-11:30am
Temperature	58°F	48°F
Relative Humidity	42%	39%
Wind Speed/Direction (from)	3 mph NW	0 mph
Pesticide Manufacturer	NuFarms Inc.	NuFarms Inc
Trade Name	AquaNeat	AquaNeat
EPA Reg # or Formulation	228-365	228-365
Rate: Product/Diluent Per Acre	2% solution	2% solution
Amount of Chemical Applied	3.84oz (1.5 gal mix)	20oz (8 gal mix)
Equipment Used (atv,backpack,truck,saw)	ATV handgun (18 GPA)	ATV handgun (80 GPA)
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	-
Plant Phenology & Stage	Rosette, Post-flowering	Post-flowering
Dominant Pest(s)	Yellowflag iris	Yellowflag iris
Equipment Used	-	-
Acres/Area Treated or # of plants	0.08 acres	0.1 acre
GPS Filename	-	-

Location #1 (Site specific description) North area of Ninepipe Location #2 (Site specific description) West side	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... Application #1: R-900 used at 3.2oz/10 gal Brandt's Bigfoot dye used at 3oz/10 gal Application #2: Spreader 90 used at 3.2 oz /10 gal Brandt's Bigfoot dye used at 3 oz/10 gal
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	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	C. Holtz	J. Wilson
Date	9/25/2014	9/25/2014
County	Lake	Lake
Time Start/Stop	8:00am-11:30pm	8:00am-11:30am
Temperature	72°F	48°F
Relative Humidity	52%	39%
Wind Speed/Direction (from)	1 mph NW	0 mph
Pesticide Manufacturer	NuFarms Inc.	NuFarms Inc
Trade Name	AquaNeat	AquaNeat
EPA Reg # or Formulation	228-365	228-365
Rate: Product/Diluent Per Acre	2% solution	2% solution
Amount of Chemical Applied	5.12oz (2.0 gal mix)	12.8 oz (5 gal mix)
Equipment Used (atv,backpack,truck,saw)	ATV handgun (14 GPA)	ATV handgun (36 GPA)
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	-
Plant Phenology & Stage	Rosette, Post-flowering	Rosette
Dominant Pest(s)	Yellowflag iris	Yellowflag iris
Equipment Used	-	-
Acres/Area Treated or # of plants	0.14 acres	0.14 acre
GPS Filename	-	-

Location #1 (Site specific description) North side working east to Ninepipe Lodge Location #2 (Site specific description) West side of refuge, north of FWP research station	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... Application #1: R-900 used at 3.2oz/10 gal Brandt's Bigfoot dye used at 3oz/10 gal Application # 2: Spreader 90 used at 3.2 oz /10 gal Brandt's Bigfoot dye used at 3 oz/10 gal
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CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	J. Zarate	
Date	9/25/2014	
County	Lake	
Time Start/Stop	9:00am-11:45pm	
Temperature	63°F	
Relative Humidity	70%	
Wind Speed/Direction (from)	0 mph	
Pesticide Manufacturer	NuFarms Inc.	
Trade Name	AquaNeat	
EPA Reg # or Formulation	228-365	
Rate: Product/Diluent Per Acre	2% solution	
Amount of Chemical Applied	2.56oz (1.0 gal mix)	
Equipment Used (atv,backpack,truck,saw)	ATV handgun (31 GPA)	
Bio-Control (genus species)	-	
# released / acre	-	
Mechanical (mow,hand-pull)	-	
Plant Phenology & Stage	Rosette, Post-flowering	
Dominant Pest(s)	Yellowflag iris	
Equipment Used	-	
Acres/Area Treated or # of plants	0.03 acres	
GPS Filename	-	

Location #1 (Site specific description) Southwest region and north of Olsen Road Location #2 (Site specific description)	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... Spreader 90 used at 3.2oz/10 gal Brandt's Bigfoot dye used at 3oz/10 gal
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